

by this time his physicians thought he had stood enough. With undaunted valor the young captain insisted that they go on. At his request three more operations were performed. At the fifth the surgeons searched the upper left neck region and at the sixth the upper right neck region.

Finally, at the seventh operation, the surgeons explored the upper middle part of the chest in front, known medically as the anterior mediastinum. There they found the tumor and removed it. So far as known, this is the first parathyroid tumor found in this location and successfully removed.

In describing this last operation, Dr. Bauer said:

"At this point we all felt that the Captain had had a sufficient number of operations, that his general condition was anything but good and that we were not justified in proceeding further. However, the Captain insisted that his mediastinum should be operated to see whether or not the tumor was present. He said that if it was not done at the Massachusetts General Hospital, he would have it done elsewhere. His requesting this operation meant that the first anterior mediastinotomy was done in searching for a parathyroid tumor and that the search was successful."

Too Late to Save Him

It was too late to save the brave captain. He lost his last fight, dying at the age of 36. But the knowledge gained through his rare courage has already enabled the physicians to find a similar tumor in a similar location in another patient. This patient had previously undergone two unsuccessful operations.

"Had it not been for our experience with Captain Charles Martell," Dr. Bauer commented, "this patient might have gone along for some years longer without the tumor being removed."

From their study of Captain Martell, the physicians have learned as much about this disease as they ordinarily would have from a dozen cases of the same disease, Dr. Bauer added. They now have complete knowledge of the symptoms and signs and chemical findings. As a result, he hopes that physicians throughout the world will realize that hyperparathyroidism is a distinct disease and that it is not even such a rare malady as has been supposed.

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Science News Letter, July 28, 1934

BACTERIOLOGY

Bacteriophage Is On Border Between Chemical and Life

BACTERIOPHAGE, strange substance that preys on disease "germs" and destroys them, has become fairly well-known since the days when the French-Canadian scientist, Dr. F. d'Herelle, described it. Hopes ran high in the early days that the "germ-eater" would prove a true panacea for most if not all of the infectious diseases that plague mankind.

Popular accounts stressed this phase of the new substance. Less well-known is the hope held by scientists that study of the nature of bacteriophage may contribute to an understanding of the great mystery of life.

How knowledge of bacteriophage might answer or partially answer the question, What is life? is explained by Alice C. Evans of the U. S. National Institute of Health in Washington. Reporting some of her own investigations of bacteriophage to the journal, *Science*, Miss Evans takes occasion to point out the following:

"The study of bacteriophage promises to enlighten the philosophical consideration because it stands at the border line between catalytic chemical substances, on the one hand, and living matter, on the other.

"If bacteriophage be regarded as an enzyme it must be conceded that it is endowed with at least one of the attributes of living matter—a limited ability for adaptation to its environment.

"On the other hand, the minute size of the individual particles offers an ob-

stacle to the acceptance of the idea that they may be living organisms. It has been shown that they may be no larger than certain protein molecules. They are so small that ten or even a hundred billion individuals may exist in a cubic centimeter of broth which nevertheless remains as clear as crystal."

A cubic centimeter is about twenty drops of fluid.

Miss Evans' investigations were of a bacteriological nature and were concerned with bacteriophage that could destroy various kinds of streptococci, the organisms that cause such ailments as septic sore throat and scarlet fever. She found that sensitivity or resistance to several races of bacteriophage might be a means of identifying certain kinds of streptococci. Her studies also showed that, contrary to common belief, streptococcus bacteriophage is widely distributed, at least during the season when streptococcus infections are prevalent.

Science News Letter, July 28, 1934

PHYSIOLOGY

Overweight Men Healthier Than Are Underweights

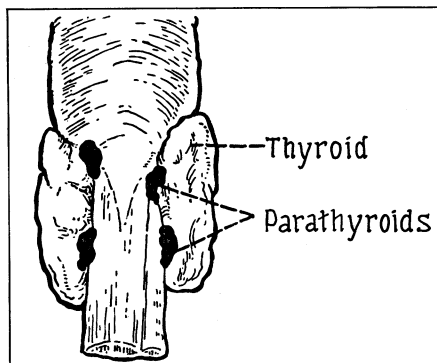
OVERWEIGHT young men have more physical endurance, greater resistance to infectious diseases, and are less likely to develop nervous or mental disorders than young men who are underweight.

These conclusions are drawn from a study of accepted entrants to the Royal Air Force and are reported by Dr. H. A. Treadgold, Group Captain, Royal Air Force, to *The Lancet*, British medical journal.

Dr. Treadgold compared the men's weights when they entered the Royal Air Force with their accomplishments in athletic competition and records of sick leave and invaliding from the Service.

"There is a definite relationship between varying degrees of body-build and functional efficiency, whether viewed from the points of capacity to endure severe or prolonged physical or mental stress or resistance to disease generally," he found.

"Capacity to endure severe or pro-



POWERFUL GLANDS

The tiny parathyroid glands, about the size of peas and located in the neck, have a tremendous influence on the body, particularly the bones.

longed physical stress as evidenced by athletic prowess is found most commonly among the over-weights. An exception to this is seen in long-distance athletes among whom underweight is commoner than overweight.

"The greater the degree of under-

weight on entry, the greater the likelihood of invaliding from the Service on medical grounds.

"It is uncommon for overweight individuals to become underweight and vice-versa."

Science News Letter, July 28, 1934

MEDICINE

License Granted To Make New Arthritis Vaccine

A NEW kind of vaccine for the treatment of the kind of rheumatism which physicians call "chronic infectious arthritis" has been developed by Drs. Bernard Langdon Wyatt and Robert Alan Hicks of Tucson, Ariz., in the course of more than two years' investigations.

The vaccine is of a special type and is made from microorganisms belonging to the streptococci group. It is given by injection into the veins in selected cases of chronic infectious arthritis.

While great benefits have been reported by a considerable number of physicians throughout the country, Drs. Wyatt and Hicks state that it is not to be regarded as a cure-all and that patients should be selected for this treatment in the manner described by them.

The Wyatt Clinic Research Laboratories have been licensed by the United States Government to manufacture the vaccine. This does not mean that the federal government guarantees the safety or effectiveness of the vaccine. It does mean, however, that so far as the government can control the conditions surrounding its manufacture and distribution, the vaccine is safe and will produce the results claimed for it in treating the disease.

Must Be Licensed

Biological products of this type, vaccines and serums for prevention or treatment of disease, may be sold in interstate commerce only when licensed by the Secretary of the Treasury. The licenses are issued on the recommendation of the National Institute of Health of the U. S. Public Health Service.

Among the regulations which must be met before a license is issued are the following: The product must be manufactured in suitable physical surroundings, that is in a room by itself and

separate from rooms or laboratories where diagnostic tests are being made; the manufacturing laboratory must be in charge of a competent professional staff; and the product must be safe and effective, so far as can be told.

Science News Letter, July 28, 1934

MEDICINE

Spectroscope Used To Detect Lead in Body

LEAD may be detected in the human body in a tenth the usual time for such a test by means of the spectroscope, it appears from reports of Prof. J. Stuart Foster of McGill University, Montreal, and Prof. Jacob Cholak of the University of Cincinnati at the Second International Spectroscopy Conference held at Massachusetts Institute of Technology.

While qualitative determination has been possible for some time, exact quantitative measurement has been exceptional without the use of the spectroscope. Both scientists also pointed out that chemical analysis heretofore used requires anywhere from 10 to 14 days while the spectroscopic analysis is possible in a period varying from 24 to 48 hours. This method also requires less tissue for the test.

Prof. Foster explained that the tests are made by a comparison of the intensity of the lead spectra with that of magnesium in the same sample being tested, in this case, an amount of spinal fluid. Using known lead concentrations to add to the spinal fluid and establishing a relation between the above ratio and the lead concentration, it is possible to detect one hundred millionth gram of lead per cubic centimeter.

Prof. Foster hopes to apply this method to the study of lead as a possible cause of multiple sclerosis.

Science News Letter, July 28, 1934



Of Dragons

WE LIKE to identify creatures from the scary fairy-tales of our childhood, or of the race's childhood, with actual living monsters, even though we meet them when we are grown-ups!

Thus with dragons. When the zoological gardens in Washington and New York acquired some new giant lizards from Komodo recently, nothing would do but they must be dubbed "dragon-lizards." These fearsome firebreathing monsters that rumbled and puffed through the folk-myths of the whole world from the legend of St. George to the tales of ancient China, were more real in our still-childlike imaginations than the almost unknown flesh-and-blood beasts crawling in the jungles of an almost unknown East Indian island. We had always had a shadow of a dragon lying across our path, and we were delighted to find a creature to fit it, even though it was really hardly big enough.

Unimportant, that the real dragons are very rare. So were the dragons of mythical antiquity. Not every cave or forest could boast one, nor every maiden be menaced by one, nor every stout young man slay one. You had to live very far away, and be a princess, and your rescuer had to be either the son of a king or the son of a god.

And in some parts of the world there were good confirmations of the one-time existence of dragons. In China especially could plenty of dragon's bones be found—fossils of the long-gone dinosaurs, that washed out of the weathering soft rocks as rivers ate away at their banks. The Chinese were scientists enough to recognize them as bones; poets enough to clothe those bones with terrifically fearsome flesh. Some bird and mammal entered into